

**FIELD SAMPLING PLAN
FOR
12th STREET DUMP SITE
WILMINGTON, DELAWARE**

Original



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ORIGINAL

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1.0 BACKGROUND

1.1 Introduction

The United States Environmental Protection Agency (EPA) Region 3 tasked Tetra Tech EM Inc. (Tetra Tech) under the Eastern Area Superfund Technical Assessment and Response Team (START) contract to conduct sampling activities under Technical Directive Document (TDD) No. 03-00-07-003 at the 12th Street Dump Site, an active CERCLA removal action in Wilmington, Delaware. This sampling plan provides the type, number and data use objectives for various sampling activities at the site.

1.2 Location

The 12th Street Dump Site is located along Brandywine Creek near the 12th Street on ramp to Interstate I-495 in Wilmington, Delaware (see Figure 1). The site is situated along the eastern side of Brandywine Creek just downstream of the outflow of Shellpot Creek.

1.3 Site Description

The 12th Street Dump Site covers approximately 5 acres, and is the scene of an ongoing EPA CERCLA Removal Action involving a former dump / landfill used for the disposal of waste rubber hoses and lead castings from former operations at the Electric Hose & Rubber Company. Contamination at the site consists primarily of soil containing high concentrations of metals (primarily lead with some arsenic and chromium), and phthalate compounds (primarily bis (2-ethylhexyl) phthalate). During site operations, various sampling has been deemed necessary to characterize site conditions including the presence of potential source material and migration of contaminants.

1.4 Previous Site Activity

Since March 2000, the 12th Street Dump Site has been the scene of an EPA removal action designed to stabilize contaminants present at the site. Activities conducted to date have included the clearing of vegetation, the removal of large debris from the site, the regrading of the site including the bank along Brandywine Creek in accordance with site capping plans, and the installation of a 2-ft soil cap designed to contain materials present at the site. Currently, personnel are securing the site for a demobilization period for the winter season; personnel will remobilize to the site in early spring in order to complete the removal action including permanent revegetation, removal of sheet pile which had been installed to shield the site from tidal fluctuations in Brandywine Creek, and removal of site support structures.

2.0 PROJECT DESCRIPTION

2.1 Objectives and Data Use

The primary objectives of this sampling assessment are:

- To determine if hazardous substances are present on the property across from the current 12th Street Dump Site removal action. Aerial photographs indicate that similar materials may have been deposited there; and,
- To identify other potential sources of hazardous substances associated with the 12th Street Dump Site and the former facility potentially responsible for the dump site along Brandywine Creek.

Data generated during this sampling event will be used to determine whether additional cleanup actions are required at the site, and whether or not additional sources of contamination continue to contribute hazardous substances to the area now being addressed by EPA. In addition, data may be used for the preparation of an engineering evaluation / cost analysis (EE/CA) or Hazard Ranking System package for the 12th Street Dump Site.

2.2 Scope of Work

Work to be conducted under this TDD includes the following items:

- Collection of approximately 10 surface water and 10 sediment samples from Brandywine Creek (including background samples).
- Collection of approximately 5-10 soil samples from the property across from the current 12th Street Dump Site removal action.
- Ship samples for laboratory analyses for a varying combination of TAL Metals, semivolatile organics, and pesticides/PCBs.
- In addition, one sediment sample will be collected from an area of Brandywine Creek known to be contaminated with oil; this sample will be shipped for PCB cogener analyses in order to assist in determining the source of PCB contamination found in sediment at the site.

Exact sampling locations will be determined on the day of field activities; however, biased sampling locations will be chosen based on available information and observations. Four background sediment samples (two upstream locations and two downstream locations) will also be collected from Brandywine Creek, a tidally influenced water body. Figure 2 illustrates approximate sampling locations, and Table 1 below provides a summary of the samples to be collected.

Table 1
Sampling Summary

Identifier	Matrix	Type of Sample	Location
SW-1	Surface Water	Surface water grab / Background	Upstream
SD-1	Sediment	Composite (0-6") / Background	Upstream
SW-2	Surface Water	Surface water grab / Background	Upstream
SD-2	Sediment	Composite (0-6") / Background	Upstream
SW-3	Surface Water	Surface water grab / Background	Downstream
SD-3	Sediment	Composite (0-6") / Background	Downstream
SW-4	Surface Water	Surface water grab / Background	Downstream
SD-4	Sediment	Composite (0-6") / Background	Downstream
SW-5	Surface Water	Surface water grab	Sea wall
SD-5	Sediment	Composite (0-6")	Sea wall
SW-6	Surface Water	Surface water grab	Sea Wall
SD-6	Sediment	Composite (0-6")	Sea wall
SW-7	Surface Water	Surface water grab	Sea Wall
SD-7	Sediment	Composite (0-6")	Sea wall
SW-8	Surface Water	Surface water grab	Sea Wall
SD-8	Sediment	Composite (0-6")	Sea Wall
SW-9	Surface Water	Surface water grab	Sea Wall
SD-9	Sediment	Composite (0-6")	Sea Wall
SW-10	Surface Water	Surface water grab	Sea Wall
SD-10	Sediment	Composite (0-6")	Sea Wall
SW-11	Surface Water	Duplicate	To Be Determined
SD-11	Sediment	Duplicate	To Be Determined
SW-12	Field Blank	Field Blank	Field Blank
S-1 to S-10	Surface Soil	Grab	Across 12 th Street

3.0 SAMPLING PROCEDURE

3.1 Sample Collection

Soil, surface water, and sediment samples will be collected during the week of January 1, 2000, weather permitting; surface water and sediment samples will be collected from downstream locations first, and will proceed toward upstream locations. Proposed sample locations are shown on Figure 2.

3.1.1 Soil/Sediment

Sediment samples will be collected using either a core sampler or a Ponar grab sampler, depending upon accessibility factors, in accordance with Tetra Tech EM Inc. Standard Operating Procedure (SOP) No. 006 (Sludge and Sediment Sampling). Ideally, a core sampler will be used to collect a composite sample (0-12"), which will be homogenized in a dedicated aluminum tray; samples will be homogenized by removing all stones and extraneous matter. Samples will be placed in 8-ounce pre-cleaned glass jars (1 per sample). Soil samples will be collected using dedicated disposable plastic scoops.

3.3 Sample and Equipment Decontamination

Reusable equipment will be decontaminated between sampling locations using a mixture ofalconox and water in accordance with Tetra Tech EM Inc. SOP No. 020 (General Equipment Decontamination) to assure sample integrity. Disposable sampling equipment will be double-bagged and disposed as dry industrial waste.

4.0 ANALYTICAL PARAMETERS

Table 2 below presents a summary of analytical parameters, analytical methods, sample containers, sample preservatives, and detection limits applicable to this sampling assessment.

Table 2
Analytical Parameters

Matrix	Parameters	Method	Containers/Preservatives	Detection Limit
Surface Water	TAL Metals	CLP SOW ILM 04.1	1 1-L polypropylene bottle (pH<2 using HNO ₃)	CRQL
Surface Water	Semivolatile Organics	CLP SOW OLM 04.2	1 32-oz amber bottle (iced)	CRQL
Surface Water	Pesticides / PCBs	CLP SOW OLM 04.2	1 32-oz amber bottle (iced)	CRQL
Sediment	TAL Metals	CLP SOW ILM 04.1	8 ounce glass jars/ iced	CRDL
Sediment	Semivolatile	CLP SOW	8 ounce glass jars/	CRQL

	Organics	OLM 04.2	iced	
Sediment	Pesticides / PCBs	CLP SOW OLM 04.2	8 ounce glass jars/ iced	CRQL
Sediment	PCB Cogeners	CLP SOW OLM 04.2	2 1-L amber bottles (iced)	CRQL
Soil	Metals	CLP SOW ILM 04.1	8 ounce glass jars/ iced	CRDL
Soil	Semivolatile Organics	CLP SOW OLM 04.2	8 ounce glass jars/ iced	CRQL
Soil	Pesticides / PCBs	CLP SOW OLM 04.2	8 ounce glass jars/ iced	CRQL

5.0 CONTROL (QA/QC) PROCEDURES

5.1 Responsibility

The Tetra Tech Site Lead will be responsible for ensuring that sample quality and integrity are maintained in accordance with the Tetra Tech Quality Assurance Project Plan, and that sampling, labeling and documentation procedures are performed in accordance with Tetra Tech SOP 019 (Packaging and Shipping Samples).

Regulations for packaging, marking, labeling, and shipping of hazardous materials and wastes are promulgated by the U.S. Department of Transportation (DOT). Air carriers that transport hazardous materials, in particular, Federal Express, require compliance with the current International Air Transport Association (IATA) Regulations, which applies to the shipment and transport of hazardous materials by air carrier. Tetra Tech will follow IATA regulations to ensure compliance, when necessary.

5.2 Field QC

Field notes of all site activities will be maintained in a field logbook, and will include a description of sample locations and times of collection. In addition, one field duplicate sample will be collected for each sample media (soil/sediment and surface water).

5.3 Laboratory QC

Laboratory QC will include matrix spike and matrix spike duplicates per each analysis, surrogate spikes per sample per analysis, initial and continuing calibrations per method requirements and method blanks per analysis,

5.4 Data Validation

Data validation will be performed by Tetra Tech using the latest appropriate EPA guidance, and a Data Quality Report will be prepared to summarize the data validation activity and to present any concerns regarding data quality.

6.0 DELIVERABLES

Information gathered from this sampling event will be compiled into a trip report, which will include the data collection methods, sample locations, data summary tables, maps, and a Data Quality Report.

7.0 REFERENCES

U.S. Environmental Protection Agency. 12th Street Dump Site – Site File. Undated.
